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IS THERE BIAS IN THE INTERIM INDEX OF RETAIL PRICES?

It is sometimes forgotten by those using the Interim Index of Retail Prices that the index strictly measures the increase since June 1947 of buying the average budget of the employed working-classes in 1937–8. It is not an index which measures the increase in the working-class cost-of-living since 1947, in the sense of the increase in the cost of buying the 1947 budget of the working-classes and those who constructed it did not have such an end in view. It, however, is often used for this purpose, such a use being implied for example in all comparisons between movements of this index and the new wage-rate index. This mistake is a natural one, seeing that the Ministry of Labour uses June 1947 as the base date for the index (because of the Ministry's unwillingness to publish its calculations of the increased cost of buying the 1937–8 budget since 1937–8).[1] This paper examines whether and to what extent there is bias in the Interim Index *when it is used for this purpose.*

Since there is no national survey of working-class expenditure in 1947 available, we cannot answer the question directly. What we can do, however, is to apply the percentage distribution of weights in the new index to the estimated working-class expenditure in 1947 and see what working-class expenditure on each commodity group is implied. Then we can compare the implied working-class spending with total national expenditure for each group, as shown by the National Income White Paper, to estimate what proportion of national expenditure is implied as working-class by the weighting system.[2] These proportions can then be compared with the pre-war ratios of working-class to total expenditure calculated from the 1937–8 budgets and published in the BULLETIN for June 1948. Such a comparison would of course not reveal very small errors in the weights.[3]

Working-class income net of taxes in 1947 was estimated by the author in the October 1948 BULLETIN as £4,735 millions. This estimate was built up as follows :—

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[1] See BULLETIN, May 1948, for a full account of this question. The fact that the wage-rate index, which does have a post-war weighting system, starts at the same base date only adds to the likelihood of misunderstanding.

[2] The use of percentages at June as annual averages will involve practically no error.

[3] The word ' error ' here means an ' error ' when the index is used for estimating current changes in the working-class cost-of-living.

	(£ millions)
Net wages	3,261
Net salaries	566
Net pay of H.M. Forces	167
Net property income	234
Social income	507
Net working-class income	4,735

Wages and direct taxes on wages are given in the National Income White Paper, and the estimate of the main item, net wages, is therefore a firm one. All but £50 millions of social security benefits were assumed paid to the working-classes. So was half of H.M. Forces' pay and War Gratutities, and the same proportion of salaries and property income as before the war. The working-classes were assumed to pay the same proportion of taxes on salaries and property income as pre-war. These assumptions make the total estimate too low, and were deliberately chosen in the original calculations so as not to overstate the redistribution of income that was revealed in the paper. It is reasonable to suppose, for example, that 'working-class' salaries (those under £250 in 1938) have increased in greater proportion than other salaries, and hence that the working-class share of the national salary bill will have risen. This distortion may mean that the estimate shown was anything from about £50 millions to £250 millions too low, and we shall estimate working-class net income in 1947, for the purposes of this paper, as £4,900 ± £100 millions.

It would seem from estimates made in the June 1948 Bulletin that working-class savings were in 1938 about £170 millions, of which about £50 millions were increases in institutional funds, and other forms of impersonal savings. Of total national savings in 1938 £157 millions were personal and £182 millions impersonal (including additions to tax reserves). In 1947 national savings were £495 millions personal, and £210 millions impersonal, a total of £705 millions. In view of the restrictions on middle-class personal expenditure and the substantial undistributed profits, working-class savings might be a lower proportion of both personal and impersonal savings than pre-war. However, there is no way of estimating this directly so it will be taken as £200—£400 millions, to allow a safe margin.

Working-class expenditure on consumption in 1947 was therefore :—

	£ million
Net Working-class income	4,900 ±100
Less Working-class savings	300 ±100
Working-class expenditure	4,600 ±200

The table below shows the result of applying the weights of the Interim Index to this estimated expenditure, the working-class share of expenditure on each commodity group that is implied, and the 1938 share[1] for the purpose of comparison:—

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[1] Bulletin, Vol. 10, p. 191.

TABLE

Commodity Group	Weight in Interim Index	1947 Working-class expenditure implied by index weights	1947 Total national expenditure	Implied working-class share in expenditure in 1947	Working-class share in expenditure in 1938
		(£ million)	(£ million)		
I Food	348	1531—1670	1995	.77—.84	.73
II Rent...	88	387—422	564	.69—.75	.59
III Clothing	97	427—466	704	.61—.66	.46
IV Fuel and Light ...	65	286—312	310	.92—1.01	.73
V Household durables	71	312—341	393	.79—.87	.50
VI Miscellaneous goods	35	154—168	560	.28—.30	.37
VII Services	79	348—379	1377	.25—.28	.30
VIII Drink and Tobacco	217	955—1042	1368	.70—.76	.60
Total	1000	4400—4800	7271	.61—.66	.55

Notes on the Coverage.

I (National Income White Paper Group 1). National expenditure includes the food element in meals out. These are apparently excluded from index weights, but spending on meals out was actually spread over all groups to arrive at weighting, so that it is implicitly included.

II (National Income White Paper Group 4). National expenditure includes an allowance for buildings occupied by non-profit-making bodies, and for hotels, boarding houses, etc., but excludes rents above Schedule A valuations.

III (National Income White Paper Group 8).

IV (National Income White Paper Group 5). National expenditure, by contrast to the Index, excludes candles.

V (National Income White-Paper Group 6). National expenditure excludes wireless sets, musical instruments, cycles and sports goods.

VI (National Income White Paper Groups 7, 9 and 15). National expenditure includes the goods mentioned in notes on Groups IV and V.

VII (National Income White Paper Groups 10, 11, 12, 13 and 14). Index excludes insurance and trade union services.

VIII (National Income White Paper Groups 2 and 3).

(For 1938, the working-class share is calculated from estimates adjusted for these discrepancies.)

When judging the working-class share of consumption, it should be borne in mind that the working-class proportion of the population appropriate to the definition of ' working-class ' used for income estimation has been estimated at 84%.[1] It should also be remembered that food, rent, and fuel and light tend to be overstated in budgets, because budgets tend to be furnished by the more careful people who might be expected to spend more on such things, and these items are also less likely to be forgotten than luxury spending when budgets are completed ; and the proportions shown for 1938 should be judged accordingly.

Let us examine in detail the last two columns of the Table, to see what changes in the working-class share of consumption are implied, and whether these changes seem plausible.

Rationing will have increased the working-class share of food consumption by 1947, and the Index weight may therefore be about right, provided it is understood that ' meals out ' are meant to be included (otherwise it would be slightly excessive). It is unlikely, however, that the working-class are paying a substantially higher proportion of the national rent bill, in view of rent control and the housing immobility of the public, and it seems that the weight attached to rent is too high. The rise in the working-class share of clothing since 1938 implied by the table is not impossible, in view of the restrictions exercised by rationing on middle-class clothing expenditure, and the possibility that the 1938 proportion was too low, and if there are errors in the index weight for clothes, they cannot be large. The proportion implied for fuel and light is clearly too high. Even though the estimate of the pre-war proportion is unreliable, the per capita working-class consumption is hardly above that of the middle-class, as is implied by the index weight, which is, therefore, too high. Similarly, the implied working-class expenditure on household durables appears excessive, even though the index weight includes some items, not a great proportion of the whole group, excluded from national expenditure. The weight for Group V is, therefore, also considered too high.

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[1] BULLETIN, Vol. 10, p. 187.

On the other hand, though the apparent working-class share in 1947 is depressed by the inclusion of some extra goods in national expenditure, Group VI, Miscellaneous Goods, seems to be substantially underestimated. There is no reason to suppose that the working-class share of these goods has fallen. On the contrary it has probably risen considerably. The same applies to Services, for which the Index weight is also apparently too low, although the pre-war proportion includes trade union and insurance services which raise it slightly. Still it is almost certain that the working-class share in 1947 was above pre-war, in view of the increase in the working-class share of total consumption, and the known availability of working-class income for such non-essentials in 1947. Since the estimate of pre-war working-class consumption of drink and tobacco was taken from an (apparently) arbitary Ministry of Labour estimate (shown in *Supplement No. 2 to the Industrial Relations Handbook*), it is not of much use for comparison with the implied working-class share of 1947 consumption, and we can reach no conclusion on the extent of error for this group, except that it would not seem to be large.

The conclusion one reaches therefore is that rent, fuel and household durables are rather overweighted, while miscellaneous goods and services are probably underweighted, if the index is used for a comparison of cost-of-living movements since June 1947.

Some check is provided by the working-class budgets for the summer of 1947, collected by the Institute of Statistics.[1] If we take the 67 families of the sample which show their total post-tax income (since only in these cases is there any check on non-household expenditure), and subtract insurance premiums and club subscriptions, as being mainly saving and in any case excluded from the scope of the Index, we have the following weighting system implied, compared to the Index weights.

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[1] T. Schulz, Family Expenditure in 1947, BULLETIN, Vol. 10, No. 11.

Index Category	*Institute Budgets*	*Index Weights*
I Food	366	348
II Rent	86	88
III Clothing	76	97
IV Fuel and light	54	65
V—VIII Miscellaneous	418	402
	1000	1000

Since the families of the sample all had children, their budgets would tend to exceed the working-class average in the proportion of expenditure devoted to food. So this sample's results are not inconsistent with the belief that food is about correctly weighted. Rents in the sample budgets are biassed upwards because they exclude rural communities. Here, therefore, the previous conclusion about over-weighting is confirmed. Since the budgets refer only to two summer weeks, some clothing purchases may have escaped them, and large purchases out of savings are excluded during computation, so the actual proportion spent will be higher than shown by the budgets, and we cannot draw any conclusions about the weight for clothing. It is unlikely that fuel consumption of the working-classes is sufficiently affected by seasonal factors to account for the difference in the weights shown above.[1] And the underweighting on balance of Miscellaneous items (which include Household Durables, believed to be overweighted, and Miscellaneous Goods and Services, believed to be underweighted) is also indicated. On the whole, however, there do not appear to be very drastic errors in the whole structure of weights.

The errors that are revealed accord with what one would expect. The index weights were constructed by correcting the 1937–8 weights for price-changes, whereas what we want for this purpose are corrections for changes in relative values of expenditure, *i.e.* for both prices and quantities. Where *relative* quantities purchased have fallen, *i.e.* where the real quantity bought of a group has not risen as much as total real consumption, because of rationing or shortages or because income elasticities of demand are low[2] (Housing, Fuel and Light, and Household Durables), the index weights are too high. Where there have been less limits on quantities bought or income elasticities of demand are high (Miscellaneous Goods and Services), the weights are too low for post-war comparisons. In the case of Food, Clothing, and Drink and Tobacco, working-class quantities purchased may not have increased *in greater proportion* than all working-class purchases, when the shortages in 1947 are remembered.

Whether the errors in the weights bias the Index depends mainly on the correlation between these errors and the price relative being weighted. It can easily be shown that if ' I ' is the true index number; ' I′ ' is the biassed index number; ' e ' is the error in any relative weight, ' w '; and ' p ' is the price relative being weighted:

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[1] In view of the fact that the summer sees building of domestic coal stocks·

[2] Strictly what concerns us here is the *expenditure* elasticity of demand.

$$I' - I = \frac{r_{ep}\,\sigma_e\,\sigma_p}{\overline{W}}$$

Since we cannot estimate the errors accurately, we cannot estimate r_{ep}. Its dimensions can, however, be indicated for the comparison June 1947—October 1948, by seeing whether high price relatives are associated with positive or negative errors in the weights. Taking the first column from the November Ministry of Labour Gazette (arranging the items in the order of price relative) and the second from the conclusions above, we have :—

	Commodity Group	*October 1948 Price relative (June 1947=100)*	*Sign of apparent error in weight*
III	Clothing	114.1	nil
IV	Fuel and Light	112.0	+
VIII	Drink and Tobacco	110.8	nil
VI	Miscellaneous Goods	109.3	—
V	Household Durables	108.5	+
	All Items	108.4	
I	Food	107.6	nil
VII	Services	105.1	—
II	Rent	99.5	+

It can be seen that the correlation between errors and price relatives is likely to be small. The order of positive and negative errors is about symmetrical. If the errors in the weights were equal, the sign of r would be very slightly negative. Of the items shown Clothing, Drink and Tobacco and Food can be ignored, as showing no or small errors. Household Durables can also be ignored as showing virtually no deviation from the general average, and so can Miscellaneous Goods because the deviation from the average price movement is inconsiderable and the weight attached is so small that errors in it are also likely to be small. The question is whether the negative product between the error in the weight given to Rent and the deviation from the unweighted mean of price relatives outweighs the positive products in the case of Fuel and Light and Services. The net effect will be small, and the dispersion of price relatives is in any case small, so it can be taken that the index shows practically no bias for this period. Possibly, however, the slow widening of choice provides possibilities of substitution which amount to a slight upward bias in the index.

It does not necessarily follow, however, that the index is going to be unbiassed for any period. If we take the period June 1947 to January 1948, for example, the underweighted price relative for Miscellaneous Goods was 7 points above the general average, and the overweighted item Rent was below. For this period the index therefore probably had a slight downward bias, understating the increased cost of living.

Bias will also appear, of course, if there is so much concern about movements in the index that price policy is administered to give relatively most assistance to the overweighted items, achieving artificially a negative correlation between price relatives and errors in the weights. This was the technique used from 1941 to 1947, when the true cost-of-living, in the sense of the relative cost of buying what was bought pre-war, and the official cost-of-living index diverged increasingly sharply.[8] So successful was this policy that the official index eventually only showed half the rise that ought to have been shown, thereby achieving a considerable restraint on wage increases.

The general structure of errors, with identifiable necessities overweighted and miscellaneous goods and services underweighted, provides possibilities of bias along the same lines as those previously employed. In order to shew the possibilities of manipulation of the index that still exist (in case such manipulation seems desirable in the event of war or other economic disaster) the under- and overweighted commodities in the index at present—and they are not likely to alter substantially so long as economic difficulties and rationing continue—are listed below. They have been found by an extension to subsections of the index of the techniques already used. Other commodities do not appear to be seriously incorrectly weighted.

Overweighted Items	*Underweighted Items*
Meat and bacon*	Fish
Fats	Potatoes and vegetables
Coal and coke*	Electricity*
Furniture and furnishings	Travel
Soap*	Entertainments*
Men's clothing*	

(Asterisks denote items where the errors in weighting are substantial.)

Since the general economic position has not changed much since 1947, the errors in weighting involved in using June 1947 as a base will not be greatly different from those involved in using a later date as a base, *e.g.* for month-to-month comparisons. Drink and tobacco may now be slightly overweighted, furniture may be less overweighted, and entertainments less underweighted, but the general structure of errors will be the same. On the whole one would expect these errors to diminish if and as the working-class is able to approach more nearly to its pre-war pattern of consumption,[9] and consequently the possibilities of manipulating the index may also tend to diminish. If economic equilibrium is restored, however, it will doubtless be found that some changes in the pattern of working-class consumption have become permanent, with corresponding permanent errors in the index. It will then be desirable, of course, to change to a new Index with a post-war weighting system.

Apart from errors given to the weights in various subsections of the Index, bias may be consciously or unconsciously introduced by gaps in the items which are priced for the Index. In each section representative items only are priced. These representative items are listed in *Supplement No. 2 to the Industrial Relations Handbook.*

The list of the items whose prices are taken into account when calculating the index omits for example the following commodities.

Special breads, veal, poultry, kidney, ham, shellfish, fish and chips, dried eggs, brown sugar, honey, pears, plums, nuts, invalid foods, animal foods, pepper, mustard, rice, sago, semolina, pies, chocolates, ice cream, coffee,

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[1] For a rough indication of this divergence, compare lines 1 and 4 of Table XVII in BULLETIN, Vol. 9, p. 248.

[9] We are concerned here with the physical pattern, not the expenditure pattern.

pickles, canned peas, soups, furnished lodgings, pyjamas, belts, scarves, ties, handkerchieves, men's gloves, aprons, brassieres, nightgowns, dressing-gowns, nylon stockings, infants' vests and pants, cotton clothing materials, men's slippers, men's wellingtons, football boots, anthracite, firewood, fire-lighters, chairs, pianos, kitchen tables, garden furniture, desks, fenders, pillows, cushions, lamp shades, pipe and cigarette lighters, gas mantles, watches and other jewellery, gramophones, toys and games, footballs, carpet sweepers, coconut matting, doormats, tablecloths, pillow cases, quilts, face flannels, dustpans, shovels, hammers, screwdrivers, saws, axes, fireguards, clothes' horses, pokers, tongs, mops, dusters, dishcloths, bread bins, cooking tins, frying pans, colanders, tin openers, pastry boards, bread boards, hair brushes, saucers, jugs, cleansing fluids, shampoos, shaving soap, steel wool, disinfectant, toilet rolls, toothbrushes, powder puffs, shaving brushes, contraceptives, darning wool, needles, pins, sewing cotton, pens, ink, pencils, rubbers, string, envelopes, coach fares, shipping and ferry fares, motor cycles (and cars), telephone calls, telegrams, admission to theatres, dances, boxing matches and greyhound meetings, use of billiard saloons, football pools, bookmakers' services, restaurant and boarding house services, undertaking, insurance services, legal services, technical training and education, stamp duties, hire of heating apparatus, gin, rum, wines, snuff, cigarette papers, tobacco for cigarettes.

Changes in the prices of any of these will not affect the Index at all. It is not suggested that such omissions are in any way improper or that these items are appropriate for pricing. In fact the items chosen as representative seem really to be so, so that in normal times these gaps will not matter. This list does indicate, however, the extent of the deficiency in coverage and hence the possibility of manipulation provided by the Index, as indeed by all price indices. In addition further possibilities lie in the fact that usually, according to the *Supplement*, the price relatives for selected items of each subsection are combined in an unweighted average, although, of course, the weights appropriate to different price relatives may be very different.

Broadly speaking the position at present is that the reduction of food subsidies or increased coal prices would cause disproportionately large movements in the Index, as would the relaxation of rent control, whereas fare increases, extra amusement taxes, dearer electricity or increases in the wages of those in service industries (particularly catering) are measures which would not affect the Index proportionately to their effect on the actual cost of living. The effect of reduced purchase tax would depend entirely in the items selected for reduction.

While, therefore, the Index is not intended to measure changes in the working-class cost-of-living the widespread habit of using it as a post-war cost-of-living index has not in practice been seriously erroneous so far. Inappropriate weights and gaps in the Index, however, may make such a use practically as well as theoretically incorrect in the future, particularly if such errors and gaps are used deliberately to bias the Index.

DUDLEY SEERS.

NUTRITION AT LOW COST

INEXPENSIVE DIETS FOR FIVE PERSONS IN NOV., 1948

1. INTRODUCTORY

Since the spring of 1941 we have undertaken twice a year inquiries into the cost of a very inexpensive diet for a family consisting of husband, wife and three children of school age,[1] and into the changes in this cost from one period to another, allowance being always made for changes in the food rations and in the general supply of specific foods. Up to now, all our data of cost in these diet schedules were based on prices ruling at the given date in Oxford; for this present survey, however, which was carried through in November 1948, we have collected prices not only in various parts of Oxford but also in three districts of London, *viz.*, Bethnal Green, Lambeth, and Kentish Town. Differences in the prices of certain foods were found to exist; but they became apparent not as regards the towns or districts but between different types of shops. Broadly speaking, prices of main foods tended to be lowest in the more highly specialized shops, mostly of the multiple type. This was found to be the case in Oxford as well as in London, and although the variations in prices observed by us were rarely very large they were fairly common, which represented a distinct change from our findings on previous occasions, when in most instances the prices asked were the maximum prices permitted for the respective foods.

2. A 'HUMAN NEEDS' DIET IN NOVEMBER 1948

In Table I we have outlined a diet as defined above that could be bought in November 1948, and have compared it with a diet of about similar nutritional value, such as would have been available in April 1948. The prices stated are those that were charged in inexpensive shops, but they are by no means always the minimum prices. Any skilful shopper could have obtained some of the foods at a slightly lower cost; against this, however, must be set the fact that it was also easily possible to pay for some of the items higher prices than those shown in our schedule. For since in most of the food shops only few prices were clearly exhibited, it was not always easy to contrive the purchase of the whole diet in the most economical way.

It will be noticed that there are considerable differences between our schedule for April and that for November. In the main, these differences are the outcome of changes in rationing. Table II gives the weekly rations that were available in 1948, in April and in November, for a family of five persons. Potatoes were derationed from May 2nd, 1948, and bread and flour from July 25th. As a sequence to this other cereal products were taken off the ration from August 25th and could since be bought freely, as could also plum jam. Hence, items 14 to 16 and 18 to 21 in Table I, which all had been rationed in April 1948, were unrationed in November. In both months, one shilling's worth of meat was allowed per person per week; but in Novem-

[1] One child of five years and two between seven and twelve years old.

TABLE I

Weekly 'Human Needs' Diet for a Family of 5 Persons

	Quantity	Price per Unit[1]		Changes since April 1948		Price per Unit[1] in 1936[5]	
		s.	d.	Quantity	*Outlay* *d.*	s.	d.
(*a*) Rationed Foods *excl. fresh milk* :							
1*a* Meat, fresh	3 lb 12 oz.	1	4	+ 1 lb	+ *10*		8[6]
1*b* Corned Beef	...		...	— 9 oz.	— *10*		...
2 Bacon	10 oz.	2	0	...	...		11
3 Margarine	2 lb 3 oz.		9	...	...		5
4 Cooking Fat	5 oz.	1	0	...	...		5½[6]
5 Sugar	3 lb 2 oz.		5	— 6 oz.	— *1¾*		2¼
6 Syrup	1 lb		9½[2]	+ 1 lb	+ *9½*		3[7]
7 Tea	8 oz.	3	6	...	...	1	6
8 Cheese	10 oz.		10	+ 2½ oz.	+ *1½*		9
9*a* Eggs, shell	3 eggs		3	— 1 egg	— *3*		1[8]
9*b* Eggs, dried	⅓ pkt.	2	6	+ ⅓ pkt.	+ *10*		
10*a* Peas, dried	1 lb		10	...	...		3
10*b* Beans, dried	...		...	— 1 lb	— *11*		...
11 Dried Fruit	...		...	— 10 oz.	— *6½*		...
12 Condensed Milk, skimmed	1 tin		8	+ ½ tin	+ *4*		3[9]
Outlay on Group (*a*) ...		*15*	*8*		+ *2¾*	*7*	*4¼*
(*b*) Fresh Milk :							
13*a* Ordinary	15½ pt.		5	...	...		3
13*b* School	5 pt		...	...	...		
Outlay on Group (*b*)		*6*	*5½*		...	*5*	*1½*
(*c*) Main Carbohydrate Foods :							
14 Bread	21 lb 7 oz.		4½	...	...		3½[10]
15 Flour	2 lb		3¾	...	...		1¾
16 Potatoes	21 lb		1½	+ 6 lb	+ *9*		0¾
Outlay on Group (*c*)		*7*	*10¼*		+ *9*	*5*	*3½*
(*d*) Fresh Vegetables *excl. potatoes* :							
17*a* Swedes	3 lb 8 oz.		2½	...	+ *1¾*		0¾
17*b* Carrots	3 lb 8 oz.		1¾	...	— *1*		1[11]
17*c* Cabbage	6 lb		2½	+ 8 oz.	— *12½*		
17*d* Other[3]	1 lb		4½	— 1 lb	— *2½*		1
Outlay on Group (*d*)		*2*	*10¼*		— *14¼*	*1*	*1¼*
(*e*) Other Foods :							
18 Rolled Oats	2 lb 8 oz.		6½	+ 8 oz.	+ *3¼*		3½[12]
19*a* Barley Flakes	...		...	— 1 lb	— *9*		...
19*b* Pearl Barley	8 oz.		7	— 8 oz.	— *3½*		3
20*a* Macaroni	1 lb		9	...	...		3[13]
20*b* Semolina	1 lb		7	...	...		
21 Jam[4]	1 lb	1	2	+ 12 oz.	+ *10*		6
22 Cocoa	4 oz.		8½	...	+ *0¼*		2½
23 Condiments	...	1	0	...	...		3½[14]
24*a* Herrings	3 lb		6½	+ 4 oz.	+ *1½*		3½
24*b* Kippers	2 lb		9½	...	...		4
25 Pork Sausages	8 oz.	1	2½	— 8 oz.	— *5¾*		8[15]
Outlay on Group (*e*)		*9*	*8*		— *3¼*	*4*	*2¾*
Total Outlay		**42**	**6**		— **5¾**	**23**	**1¼**

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[1] The price 'unit' is : eggs in shell, one egg ; dried eggs. packet of 12 eggs ; condensed milk, tin ; fresh milk, pint ; bread, loaf of 1¾ lb ; cocoa, ¼ lb ; condiments, total outlay ; all other foods. lb.

[*Footnotes continued on next page*]

[*Footnotes to Table I, continued*]

[2] Bought in 2-lb tin. [3] Onions in November, 1948, onions and parsnips in April, 1948.

[4] Plum jam. [5] Derived from B. S. Rowntree, *The Human Needs of Labour*, except for the prices of bread and fresh milk, which are based on the figures in the Ministry of Labour Gazette for July, 1946.

[6] Weighted average price, *op. cit.*, p. 82. [7] Treacle. [8] Shell eggs only.

[9] Price adjusted for tin of larger size. [10] 8¼d. for 4 lb. [11] Assumed.

[12] ½d. has been added to the price of oatmeal.

[13] Price of rice or sago ; no prices were given for macaroni or semolina.

[14] 2d. disallowed, since bread is bought instead of only flour for the baking at home of all bread, and therefore no yeast is required.

[15] 2d. has been added to the price of beef sausages.

TABLE II

Weekly Rations for Family of 5 Persons[1]

	April 1948	November 1948
Meat	4/2d.	5/–d.
Corned Beef	–/10d.	—
Bacon	10 oz.	10 oz.
Butter or Margarine	15 oz.	15 oz.
Margarine	1 lb 4 oz.	1 lb 4 oz.
Cooking Fat	5 oz.	5 oz.
Sugar	2 lb 8 oz.	2 lb 8 oz.
Jam or Sugar	1 lb 4 oz.	10 oz.
Tea	2½ oz.	2 oz.
Cheese	10 oz.	10 oz.
Eggs, shell	0.8 egg[2]	0.6 egg[2]
Milk, fresh	15½ pt.[3]	15½ pt.[3]
' Points '	35	30
Bread Units	49[4]	—[5]
Potatoes	15 lb	—[5]

[1] Including 3 children of school age. [2] Approximately.

[3] 3½ pt. per child and 2½ pt. per adult.

[4] Excluding allowances for manual workers.

[5] Derationed.

ber all of it was butcher's meat while in April 2d. worth had to be taken in the form of corned beef. In November as well as in April we have assumed the weekly purchase of a joint, costing 1s. 6d. a lb and weighing 2 lb 12 oz, and, in November, in addition to this and in replacement of the corned beef, the purchase of a lb of stewing meat at 10d.

3. CHANGES IN COST SINCE 1936

The last column in Table I shows the prices of the several foods in our schedule ruling in 1936. Most of these prices are based on Mr. B. S. Rowntree's diet schedule in *The Human Needs of Labour*[1], but since no bread and fresh milk were included in Mr. Rowntree's diet we have used for these foods the prices stated in the *Ministry of Labour Gazette* for July 1936. In 1936, the weekly diet for 5 persons compiled by Mr. Rowntree cost 20s. 6d., while the diet compiled by us would have cost 23s. 1¾d. The main differences between these two diets are that Mr. Rowntree's diet only allowed for the

[1] Explaining how the prices for it were collected, Mr. Rowntree wrote : ' In the late autumn I made a careful study of the prices obtaining in the cheapest shops and markets in the East End of London, York, and High Wycombe. In some cases there were considerable variations, and I have not always taken the lowest figure, but the one that seemed to be the most general for food of reasonable quality.' *Op. cit.*, pp. 81–2.

consumption of 14 pints of skimmed tinned milk, at a total cost of 2s., of one egg instead of seven eggs, and of flour instead of bread. On the other hand, it included 7 lbs of meat, 1½ lb of bacon, 1 lb of cheese and 4 lbs of apples, besides some outlay on other fruit. It may of course be argued that our allowance of 7 eggs is too large for a human needs diet; but if there is neither a sufficient quantity nor variety of meat to make the diet attractive, something else has to be included to make it acceptable not only from a nutritional but also from a culinary point of view.

No comparative prices were available for 1938, but in Table III we have calculated the changes in cost by means of the Ministry of Labour index of food retail prices for July 1938, as compared with that index for July 1936. On this basis the expenditure required to purchase the diet in Table I would have amounted to 26s. 1¾d. In November 1948, the cost of the diet was 84 per cent above the cost in 1936, and 63 per cent above that in 1938. In April 1948, the outlay required was even slightly higher, mainly on account of the higher prices of vegetables. In comparing the figures of cost in 1936 and 1938 with those for 1948, it should be noted that no free milk is included in the diet for 1936 and 1938, since before the war it was supplied only in some localities, and then only to very poor children in special need of it. If these five pints of milk are omitted from all the schedules, the increase in cost from 1936 to November 1948 amounted to over 94 per cent, while from July 1938 to November 1948 it was 74 per cent.

TABLE III

Index of Cost of Human Needs Diet

	July 1936	July 1938	April 1948	November 1948
Outlay on Diet	23s. 1¾d.	26s. 1¾d.	42s. 11¾d.	42s. 6d.
Index	*100*	*113*	*186*[1]	*184*

[1] Approximately only, since the diet schedule for April 1948 is not identical with that for July 1936, July 1938, and November 1948.

4. THE COST OF AN IMPROVED DIET

The number of ' points ' needed for the purchase of the diet in Table I fell short by about one-third of the number of 'points' that were available in November 1948 to a family of 5 persons. According to the figures in Table IV, 10 out of the 30 ' points ' at the family's disposal remained unused; actually, the possible outlay of ' points ' on the diet ranged from 18 to 21. By buying syrup in 1-lb tins instead of in 2-lb tins, one more point than shown by us would have been required per lb of it, while 2 ' points ' could have been saved by purchasing a lb of dried green peas instead of split peas.

In Table V we show how another 10 ' points ' might have been utilized for the purchase of certain small semi-luxuries, which would have made the diet a little more attractive. The improved diet outlined in Table V also allows for the purchase of the family's sweets ration. In order to maintain about the same level of nutritional intake as that supplied by the basic diet,

Table IV

Outlay of ' Points ' on Human Needs Diet for 5 Persons

	Quantity	' Points '
Syrup	1 lb	7[1]
Eggs, dried	⅓ packet	4
Peas, dried	1 lb	4
Condensed Milk, skimmed	1 tin	5
' Points ' spent		20
' Points ' available		30
Unused ' Points '...		10

[1] Bought in 2 lb tin.

Table V

Improvements on Human Needs Diet for 5 Persons

	Quantity	Outlay		' Points '
		s.	d.	
Human Needs Diet		**42**	**6**	**20**
Excluding :				
Jam	8 oz.		7	—
Macaroni	4 oz.		2¼	—
Semolina	4 oz.		1¾	—
Rolled Oats	8 oz.		3¼	—
Bread	1 lb 2 oz.		3	—
		1	5¼	—
Including :				
Suet	4oz.		9	4
Dates	8 oz.		5	2
Beans in Tomato sauce	1 tin		6	4
Chocolate	4oz.		10	—
Boiled Sweets	11 oz.	1	10	—
		4	4	10
Improved Diet		**45**	**4¾**	**30**

reductions are made in the quantities of jam and of unrationed cereal foods. This improved diet would have required an outlay of 45s. 4¾d., *i.e.*, of 3s. 10¾d. more than that on the basic diet.

5. Individual Food Consumption

The shares in the diet scheduled in Table I that might be available to each member of the family, and would provide for each of them a reasonably satisfactory standard of nutrition, are given in Table VI. They are such as would be possible within the framework of the normal family meals, and they probably broadly correspond to the distribution of food customary in many families[1]. So as to allow for a small margin of safety with respect to the calorific and the protein intake, we have excluded from these shares 14 oz. of bread included in the schedule in Table I, and representing 994 calories and 33.6 grammes of second-class protein.

[1] *Cf.* F. Le Gros Clark and Helen S. McKay, *Allocation of Food within the Family Circle* (1942).

Table VI

Individual Shares Available in ' Human Needs ' Diet for 5 Persons (per Week)

	Husband	Wife	Child 7—12 years[1]	Child 5 years
(*a*) Rationed Foods *excl. fresh milk* :				
1*a*[2] Meat	1 lb 3 oz.	10 oz.	11 oz.	9 oz.
2 Bacon	6 oz.	1 oz.	1 oz.	1 oz.
3 Margarine	9 oz.	9 oz.	6½ oz.	4 oz.
4 Cooking Fat	2 oz.	1 oz.	¾ oz.	¼ oz.
5 Sugar	6 oz.	12 oz.	12 oz.	8 oz.
6 Syrup	1 oz.	3 oz.	4 oz.	4 oz.
7 Tea	2½ oz.	3 oz.	1 oz.	½ oz.
8 Cheese	5 oz.	2 oz.	1 oz.	1 oz.
9*a* Eggs, shell	1 egg	½ egg	½ egg	½ egg
9*b* Eggs, dried	1 egg	¼ egg	1 egg	½ egg
10*a* Peas, dried	6 oz.	3 oz.	2½ oz.	2 oz.
12 Condensed Milk, skimmed	0.10 tin	0.20 tin	0.25 tin	0.20 tin
(*b*) Fresh Milk :				
13*a* Ordinary	2 pt.	3 pt.	3½ pt.	3½ pt.
13*b* School	—	—	1⅔ pt.	1⅔ pt.
(*c*) Main Carbohydrate Foods :				
14 Bread[3]	6 lb 9 oz.	5 lb 10 oz.	3 lb 3½ oz.	1 lb 15 oz.
15 Flour	12 oz.	6 oz.	6 oz.	2 oz.
16 Potatoes	7 lb	4 lb	3 lb 12 oz.	2 lb 8 oz.
(*d*) Fresh Vegetables *excl. potatoes* :				
17*a* Swedes	1 lb	12 oz.	10 oz.	8 oz.
17*b* Carrots	8 oz.	12 oz.	12 oz.	12 oz.
17*c* Cabbage	1 lb 8 oz.	1 lb 2 oz.	1 lb 2 oz.	1 lb 2 oz.
17*d* Onions	8 oz.	3 oz.	2 oz.	1 oz.
e) Other Foods :				
18 Rolled Oats	8 oz.	8 oz.	9 oz.	6 oz.
19*b* Pearl Barley	3 oz.	2 oz.	1 oz.	1 oz.
20*a* Macaroni	5 oz.	3 oz.	3 oz.	2 oz.
20*b* Semolina	2 oz.	3 oz.	4 oz.	3 oz.
21 Jam	2 oz.	4 oz.	3½ oz.	3 oz.
22 Cocoa...	—	1 oz.	1 oz.	1 oz.
24*a* Herrings	13 oz.	13 oz.	8½ oz.	5 oz.
24*b* Kippers	8 oz.	7 oz.	6 oz.	5 oz.
25 Sausage Meat	3 oz.	2 oz.	1 oz.	1 oz.

[1] Two children in this age group. [2] The serial numbers correspond to those in Table I.
[3] 14 oz. unallotted.

The cost of each person's share in the diet is set out in Table VII. The outlay on improvements in the diet is based on the data in Table V, and we have assumed the improvements to affect approximately equally the consumption of each member of the family, raising the cost of each share by between 9¼d. and 9½d. The last column in Table VII shows the average cost per head of the diet, and it will be seen that the cost of the wife's and of each of the older children's shares correspond fairly closely to the average cost, in particular if allowance is made for the differences in the tea consumption suggested by us, *viz.*, 3 oz. per week by the wife and 1 oz. by each of the two children. The outlay on the husband's share, however, would have amounted to about 130 per cent of the cost per head of the basic diet, while the outlay on the share of the youngest child would have taken only about 75 per cent of the outlay per head; as regards their shares in the rationed foods, excluding milk, the expenditure on the husband's share would have been 151 per cent and that on the youngest child's share 69 per cent of the average

TABLE VII

Weekly Cost of Individual Shares of Diet for 5 Persons

	Husband		Wife		Child 7–12 yrs.[1]		Child 5 years		Average per Person	
Foods in Table VI :	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
(*a*) Rationed *excl. fresh milk* ...	4	8¾	3	2	2	9¾	2	2	3	1½
(*b*) Fresh Milk		10	1	3	1	5½	1	5½	1	3½
(*c*) Main Carbohydrate Foods	2	6¼	1	10	1	3¼		9¼	1	6½
(*d*) Fresh Vegs. *excl. potatoes*		9½		6¾		6		5½		6¾
(*e*) Other Foods	1	10¾	1	11½	1	9	1	4	1	8¾
Total	10	9¼	8	9¼	7	9½	6	2¼	8	3
Condiments		2½		2½		2½		2		2½
Total 'Human Needs' Diet[2] ...	10	11¾	8	11¾	8	0	6	4¼	8	5½
Share in Improvements		9½		9½		9¼		9¼		9½
Total Improved Diet[2]	11	9¼	9	9¼	8	9¼	7	1½	9	3

[1] Two children in this age group. [2] Excluding expenditure of 2¼d. on 14 oz. of bread.

expenditure on this group, the father's diet being supplemented to a considerable extent by the youngest child's rations.

6. THE NUTRITIONAL INTAKE

The nutritional intake that would have been obtained from the individual shares as outlined in Table VI is given in Table VIII. The upper section of Table VIII shows the nutritional requirements as recommended by the Ministry of Health. The small deficiencies in calorific intake from each person's share, as compared with their requirements, could be made good

TABLE VIII

Nutritional Requirements and Intake from 'Human Needs' Diet

Nutritional Requirements per Day:	Husband	Wife	Child 7–12 yrs.[2]	Child 5 years	M.A.E.'s.[1] of Family of 5 Pers.
Calories	3000	2500	2100	1500	3.73
Protein, gm.	70	60	65	50	4.43
Calcium, gm.	0.8	0.8	1.4	1.3	7.13
Iron, mgm.	10	10	13	8	5.40
Vitamin A, Intern. Units ...	3000	3000	3000	3000	5.00
Vitamin B_1, mgm.	0.90	0.75	0.95	0.68	4.68
Vitamin C, mgm.	30	30	30	30	5.00
Individual Intake per Day from 'Human Needs' Diet (Table VI) :	Husband	Wife	Child 7–12 yrs.[2]	Child 5 years	Average Intake[3] p. M.A.E.[1]
Calories	2965	2470	2080	1485	3000
Protein, gm.	100	77	77	50	82
Calcium, gm.	0.9	0.8	0.9	0.8	0.6
Iron, mgm.	19	15	12	9	13
Vitamin A, Intern. Units ...	3360	4000	3950	3700	3790
Vitamin B_1, mgm.	2.0	1.5	1.3	0.9	1.5
Vitamin C, mgm.	69	48	47	40	50
Animal Protein : gm.	36	27	30	27	34
of protein requirements ...	*51%*	*45%*	*46%*	*54%*	*41%*

[1] Male Adult Equivalent. [2] Two children in this group.

[3] Including nutrients from 14 oz. of bread not allotted to individual members of the family.

by the consumption per week of 1 oz of bread for every 10 calories per day. It may appear that the amount of protein that would be available to the youngest child from his share has been cut rather fine; it could, however, be easily augmented by slightly reducing its share in calorific foods free from protein, *viz.*, sugar and fats, and making up the deficiency in calories thus brought about, by starchy foods, which are also fair sources of protein. It will be noticed that the child's intake of animal protein from his share would be as high as that of his mother from her share.

In the last column of Table VIII the nutritional requirements of the family are expressed in 'male adult equivalents', *i.e.*, in index numbers based on the requirements of a male adult, which requirements have been equalized to 1 for each nutrient. In previous papers these indices were termed by us ' man values ', but since this tended to cause confusion with the data of 'man values' of cost, employed by us in surveys of family expenditure, we decided to use henceforth the expression ' male adult equivalent ' or, for short, M.A.E., when measuring relative nutritional requirements. It is interesting to compare these average figures of nutritional intake with the corresponding figures derived from the ' human needs ' diet as outlined by Mr. S. Rowntree in 1936. By applying to that diet the same scales of values as for our schedule, we obtained the following figures of intake per M.A.E. per day: calories, 3,000; total protein, 82 gm.; animal protein, 34 gm.; calcium, 0.4 gm.; iron, 16 mgm.; vitamin A, 5200 international units; vitamin B_1, 1.6 mgm.; vitamin C, 50 mgm. (approximately). The high intake of vitamin A in Mr. Rowntree's diet reflects the fact that 1 lb of liver per week was included in his diet, while the low intake of calcium, about 0.15 gm. per M.A.E. per day less than that supplied by our diet, results in about equal parts from the smaller quantities of milk in his diet schedule and from the use before the war of plain flour instead of the calcium reinforced flour, which latter came into general use during the war. Except as regards the intake of calcium, Mr. Rowntree's diet was thus nutritively equal or even superior to the diet as scheduled by us.

However, even our diet falls short of what is considered the optimum intake of calcium, at least as regards the children's intake of it. The shares of the two adults provide the necessary amounts of calcium, but from Table IX it will be seen that the adults could attain this intake only by consuming large quantities of calcium reinforced bread and flour. It is instructive to compare the role played by milk and cheese on the one hand, and of bread and flour on the other, in the intake available to each individual. The total actual intake of calcium by each of the older children would have been as large as that of the husband, and the actual intake of the youngest child as large as that of the wife; but while of the husband's intake 42 per cent would have been derived from milk and cheese and 31 per cent from bread and flour, nearly 65 per cent of the older children's intake would have come from milk and cheese and only slightly over 15 per cent from bread and flour. The youngest child would have obtained almost three-quarters of his total

TABLE IX

Intake of Calcium from ' Human Needs ' Diet

	Husband	Wife	Child 7—12 years	Child 5 years
	%	%	%	%
All Meat[1]	1.6	0.9	0.7	0.7
Herrings and Kippers	6.1	6.4	4.3	3.4
Eggs, shell and dried	0.9	0.5	0.7	0.5
Cheese	18.4	8.1	3.7	4.2
Milk, fresh and tinned	23.6	40.1	61.1	67.9
Bread and Flour	31.0	27.8	15.3	9.8
Rolled Oats	2.0	2.3	2.3	1.7
Other Cereals[2]	0.9	0.7	0.7	0.6
Potatoes	3.6	2.3	1.9	1.4
Other fresh Vegetables	9.9	9.0	7.7	8.2
Dried Peas	1.6	0.9	0.7	0.6
Other Foods	0.4	1.0	0.9	1.0
	100.0	100.0	100.0	100.0
Intake p. Day	*0.9 gm.*	*0.8 gm.*	*0.9 gm.*	*0.8 gm.*

[1] Including bacon and sausages. [2] Barley, macaroni, semolina.

intake from milk and cheese, and less than 10 per cent from bread and flour, which latter foods would have provided in the mother's diet 28 per cent of the calcium intake, and milk and cheese 48 per cent of it.

9. CONCLUSION

A ' human needs ' diet could be obtained in November 1948 at a slightly lower outlay than in April 1948, mainly on account of a decline in the prices of vegetables. A comparison with the ' human needs ' diet as devised by Mr. Seebohm Rowntree in 1936 suggested that his diet schedule was possibly more attractive than ours from a culinary point of view, mainly on account of the fact that before the war meat and meat products could be obtained freely and at a low cost. We also found that Mr. Rowntree's diet was nutritionally superior to ours as regards the supply of iron and of vitamin A, but that it was inferior to it as regards the intake of calcium, part of this deficiency in calcium, however, being accounted for not by the absence of foods naturally rich in calcium but by the absence of artificial calcium compounds which during the war were added to all flour to enhance its content of this mineral.

In 1936 Mr. Rowntree's diet could be bought for 20s. 6d., while the outlay on the diet outlined by us, would have amounted to 23s. 1½d. In November 1948, our diet cost 42s. 6d., even though in 1948, 5 pints of milk per week were obtained free by 3 children at school, which in 1936 would have required an outlay of 1s. 3d. Thus without adjustment in the difference in the total quantity of milk that had to be paid for, the cost of the diet showed a rise by 84 per cent, from 1936 to November 1948, while if the adjustment is made the increase in cost during this period was over 94 per cent.

T. SCHULZ.

TABULAR APPENDIX.

EDITORIAL NOTE

Tables comparing the broad trends of production, prices and wages, the volume of foreign trade and the supply of coal for a number of European countries, the United Kingdom and the U.S.A. are given below. For some countries more up-to-date figures are available than for others. These time lags will, it is hoped, be reduced in future and the tables will be extended when more information becomes available. This index numbers are based as far as possible on 1938.

Explanation of symbols :

... the figure is not available.
(—) figures provisional or approximate.
– figure is negligible.

Table I. *Industrial Production* (*or Employment*)
Index Numbers 1938=100

Index Numbers	Monthly Averages				1948					
	1939	1945	1946	1947	June	July	Aug.	Sept.	Oct.	Nov.
Industrial Production[1]										
U.S.A.[2] ...	122	228	191	210	216	209	215	216	219	...
United K.[3] [4]	104[13]	...	100	108	124	112	110	124	127	129
France[4] ...	...	46	81	95	114	106	93	104	92	(104)
Belgium ...	107	38	88	107	107	107	113	119	...	...
Netherlands ...	111	30	73	92	116	115	105	116	...	...
Denmark (rev.)	105	74	101	116	137	197	135	141	142	143
Sweden ...	109	112	135	138	142	141	141	142	...	...
Norway[4] ...	107	69	100	115	134	80	123	130	128	...
Finland[5] ...	...	45	58	74	88	75	77	91	...	...
Poland[6] ...	...	...	91	121	150	146	157	...	...	...
Czechoslovakia[8]	...	...	...	87	99	86	94	102	110	...
Bulgaria ...	106	...	122	141	173	177	177	210	225	...
Italy[7]... ...	...	...	54	70	77	78	73	83	...	...
Germany[9] ...	...	...	34	40	51	62	66	70	73	...
Austria[10] ...	...	...	...	61	101	100	103	101	...	...
Industrial Employment :										
Switzerland[11]	98	110	123	134	137	...	...	136	...	...
Great Britain[12]	100	100	97	104	106	106	107	107	108	108

Sources : Official Statistics. For *Belgium* : Institut de Recherches Economiques et Sociales, Louvain ; for *Sweden* : Sveriges Industriförbund ; for *Finland* : Unitas ; for *Germany* : Control Commission (British Element) ; for *Italy* : Confederazione Generale del' Industria Italiana ; for *Austria* : Monatsberichte des Oest. Institutes für Wirtschaftsforschung.

[1] Mining and Manufacturing, except Denmark (manufacturing only), and France Netherlands (mining, manufacturing and public utilities) ; see also Note 3.

[2] Adjusted for seasonal variations.

[3] Interim Index of industrial production (mining, manufacturing, building and public utilities) 1946=100. [4] Adjusted for number of working days.

[5] Revised series. Annual index of Kommerskollegium linked to monthly index of Sveriges Industriförbund. Adjusted for seasonal variations. [6] Export industry only.

[7] Production of basic arricles. 1937 (pre-war boundaries)=100.

[8] Provisional. 1937=100. [9] Bizonal Area. 1936=100.

[10] Revised series. Industrial key materials and consumers' goods industries. 1937=100.

[11] Wage earners employed in manufacturing and building. Quarterly figures.

[12] Employment (including employers and self-employed) in manufacturing. June 1939=100 ; all annual figures refer to June. [13] 1938.

TABLE II

Wholesale Prices[1]

Index Numbers : 1938=100

Index Numbers		Monthly Averages				1948					
		1939	1945	1946	1947	June	July	Aug.	Sept.	Oct.	Nov.
U.S.A.	a[2]	98	135	154	193	211	215	216	214	(209)	(210)
U.K.	a	101	167	173	189	219	219	218	217	217	217
	b[3]	91.5	138	142	155	180	180	180	179	179	179
France	a	105	375	648	989	1691	1698	1783	1791	1884	1974
	b	92	(275)	189	289	274	275	288	290	305	320
Holland	a	102	177	245	266	274	273	274	273	...	...
	b	99	(122)	169	183	187	186	187	186	...	...
Switzerland ...	a	104	206	201	209	218	217	216	215	214	217
	b	103	...	204	213	222	221	220	219	218	221
Sweden	a	103	174	168	179	195	194	195	195	195	...
	b	98	...	173	199	215	214	215	215	215	...
Denmark	a	105	190	187	207	229	230	231	231	231	231
	b	98	...	180	198	218	219	220	220	220	220
Norway	a	102	177	169	175	182	182	181	181	181	182
	b	97	...	138	144	149	149	148	148	148	149
Finland	a	106	386	605	724	967	986	981	979	973	...
	b	98	...	207	248	330	336	334	334	332	...
Czechoslovakia ...	a	115	173	295	313	326	334	335	336	333	...
	b	114	...	170	181	187	192	193	193	192	...
Italy	a	...	...	...	5158	5142	5139	5704	5769	...	...

[1] Prices expressed in national currencies and in U.S. dollars at official rates.

[2] a=in national currency. [3] b=in U.S. currency.

TABLE III. *Wages*

Index Numbers[1]	Monthly Averages				1948					
	1939	1945	1946	1947	May	June	July	Aug.	Sept.	Oct.
U.S.A.[2]	101	163	173	195	207	210	212	215	217	218
United Kingdom[3] ...	...	149	161	168	175	176	176	176	176	178
Switzerland[4] ...	100	146	160	174	...	181	...	...	182	...
France[5]	...	328	448	525	...	771	...	...	811	...
Netherlands[6] ...	100	131	163	168	175	175	...	...	...	...
Czechoslovakia[7] ...	100	182	304	314	317	317	...	...	...	...

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[1] Base periods : U.S.A. and France : 1938=100 ; United Kingdom : September 1939=100 ; Switzerland : January–August 1939=100 ; Netherlands : 1938–9=100 ; Czechoslovakia : March 1939=100. [2] Average hourly earnings in manufacturing. [3] Weekly wage rates ; Ministry of Labour (all industries). [4] Hourly rates in industry ; quarterly figures. [5] Hourly rates for men in Paris. The annual figures refer to October. For 1948 hourly wages of metal workers (' manoeuvres ordinaires ') in the Paris region. Hourly rates in industry. [7] Hourly rates in manufacturing.

TABLE IV. *Foreign Trade* Volume Index[1]

Index Numbers		Monthly Averages				1948					
		1939	1945	1946	1947	June	July	Aug.	Sept.	Oct.	Nov.
U.S.A.	Imports	114	130	139	133	155	143	149	147	...	...
	Exports	105	183	191	255	189	188	185	176	...	...
U.K.	Imports	97	62	69	77	81[2]	...	...	82[2]	...	...
	Exports	94	46	99	108	134[2]	149	133	132	142	148
France	Imports	88	34	112	117	...	...	...	...	...	...
	Exports	99	10	43	82	...	...	...	...	...	...
Switzerland ...	Imports	118	31	105	147	156	141	127	118	126	132
	Exports	97	57	101	115	126	123	116	125	146	139
Denmark	Imports	98	21	86	82	79	87	73	93	97	97
	Exports	101	32	59	68	57	63	57	60	77	70
Sweden	Imports	117	30	94	124	123[2]	...	...	116[2]	...	...
	Exports	108	50	66	73	87[2]	...	...	92[2]	...	...
Norway	Imports	111	46	78	117	101	85	92	110	129	...
	Exports	108	19	61	81	88	65	71	81	77	...
Poland[3]	Imports[3]	...	108[4]	172	139	164	118	126	157	...	...
	Exports	...	17[4]	33	54	91	106	100	101	...	...
Czechoslovakia[5] ...	Imports	...	...	35	77	...	...	...	...	...	...
	Exports	...	...	26	56	...	...	...	...	...	...
Hungary	Imports	...	1	15	48	59	55	52	64	...	...
	Exports	...	...	15	27	42	33	30	33	...	...
Austria[5]	Imports	...	...	...	24	47	50	52	52	...	...
	Exports	...	...	...	29	52	58	60	56	...	...

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[1] Deflated Values (1938=100) [2] Average of quarter. [3] From the Statistical Tables of the Polish Institute for Economic Research. [4] Monthly average of 3rd and 4th quarter. [5] 1937=100.

TABLE V. *Production of Steel* (*Ingots and Castings*)

Thousand metric tons	Monthly Averages				1948					
	1937	1938	1946	1947	June	July	Aug.	Sept.	Oct.	Nov.
U.S.A.	4282	2400	5035	6410	6581	6412	6746	6726	7232	...
Great Britain ...	1101	881	1074	1057	1509[1]	943	1101	1509[1]	1207	1231
France	660	518	367	479	616	638	612	544	443	...
Belgium	322	190	190	241	240	317	351	352	372	355
Luxembourg ...	209	120	108	143	209	198	218	222	224	239
Sweden	94	83	101	99	104	64	90	119	...	...
Poland	122	120	102	132	...	...	...	...	...	...
Czechoslovakia ...	192	153	139	190	225	216	211	219	231	...
Hungary	55.4	54.0	29.4	49.7	63.9	...	...	...	...	...
Italy	175	194	96	142	194	192	166	189	...	...
Austria	54.1	...	15.6	29.7	59.2	62.3	60.9	57.9	58.8	...
Germany										
Bizone[2] ...	1353[3]	...	248	296	378	457	510	572	610	...
French Zone ...	...	...	25	63	105	122	...	...	...	...

Source : U.N.O. Monthly Bulletin and other official statistics.

[1] Five weeks. [2] Including iron castings. [3] 1936.

Note.—Table VI, Coalmining and Supplies, will be given in the March issue.